28. (New) The wind power plant according to claim 1, including coupling means for connecting the plant to a transmission or distribution network having a voltage of between between 2 and 50 kV.--

REMARKS

This Amendment is in response to the Office Action of December 14, 2001, in which the Examiner made certain technical objections to the specification and claims. The specification has been amended in order to delete reference to specific claims. Likewise, claim 26 has been deleted. The amendments should not be construed as intended in any way limit the claimed subject matter.

Claims 1, 9, 10, 12 and 25 are rejected as allegedly anticipated over Lauw et al. (U.S. Patent No. 4,994,684).

Claims 2-7, 11, 13-24 and 26 are rejected over Lauw in view of Elton '165.

The Examiner's rejection of the claims is respectfully traversed for the reasons set forth below.

Claim 1 has been amended in order to define more precisely the structure of the cable forming the winding of the machine. It is believed that the Amendments clearly distinguish the claimed subject matter from Lauw. Lauw shows a generator, but does not describe or disclose a winding for a high voltage generator employing a cable formed of an inner semiconducting layer, a solid insulation layer surrounding the insulation layer and an outer simiconducting layer. The invention is designed for operation at high voltage and the claimed cable is adapted for this purpose.

In this connection, Applicants respectfully disagree with the Examiner's assertion that the invention is obvious over Lauw in view of Elton. Elton discloses an electrical cable provided with a certain insulation system. Elton '165 is related to a parent application Elton '565 in which three embodiments are disclosed. A first embodiment illustrates a conventional electric machine having rigid windings formed in a conventional manner but employing a pyrolyzed glass layer in the end winding region for field control. A second embodiment is an insulated housing using the same pyrolyzed material. Finally, a third embodiment in Elton '565 shows a cable for power transmission and distribution employing such a pyrolyzed layer in the insulation system. Nowhere in either Elton '165 or Elton '565 is it disclosed or suggested that the cable could be used as a winding of an electric machine.

It is not clear from the Office Action whether the Shildneck reference is cited in combination with Elton with respect to any particular claims. However, Applicants are familiar with Shildneck and believe that the combination suggested by the Examiner is inappropriate. Shildneck discloses a conventional high current, low voltage machine which employs a cable-like conductor which has a hollow core and is used to carry a cooling fluid. Shildneck uses conventional insulation and operates at relatively low voltage. Shildneck is primarily concerned with heat effects caused by the high current carried by the winding. His solution is to provide a winding in the form of a cable-like structure that can carry a cooling fluid. Shildneck completely misses the point and advantage of the present invention which is to provide a high voltage cable which can avoid the effects of corona discharge and avoid the thermal effects inherent with high current machines.

Shildneck does not recognize the advantage of high voltage operation and does not in any way suggest that such operation would be advantageous. Further, as noted above, Elton does not suggest that the transmission and distribution cable disclosed therein could be used as the winding

of a high voltage machine. Further, Elton is concerned with bleeding off static charge in a conventional low voltage arrangement, whereas the present invention is concerned with confining the electric field so that the static charge, if any, is negligible.

The Examiner's assertion that it would be obvious to provide different layers of the same coefficient of thermal expansion is respectfully traversed, because it is not simply a matter of choice to select materials simply on the basis of their coefficients of expansion. If one chooses to select on that basis, then the electrical properties of the cable winding would be drastically changed. Indeed, in a high current machine which operates at relatively high temperatures but at low voltage, the selection of insulation layers might be routine. However, in a high voltage application where temperature considerations are usually not important, using temperature coefficient of expansion as the selection criterion without regard for high voltage considerations would not necessarily result in an operable device. Indeed, it is likely that such a device would fail because the insulation properties might be changed as a result of modifying the materials so as to enable the insulation to confine the electric field and resist the electric field stress.

With respect to the Examiner's comments regarding the grounding methods, machine grounding techniques are not necessarily adapted for high voltage cables. Indeed, one would assume that the grounding a high voltage cable could have catastrophic effects.

With respect to claim 8, the Examiner cites Lauw, Elton and Takaoka. Takaoka is designed to prevent the so called skin effect in conductors. The skin effect appears on the surface of the conductors as a result of the self-induction caused by the alternating magnetic field produced by the alternating current in the conductor. The skin effect increases the AC resistance and decreases the transmission capacity of the power transmission cables. In the present invention, the cable winding is formed of a plurality of insulated strands which are designed to reduce and suppress eddy currents which are produced by the rotating magnetic field in the

machine. The eddy currents are different phenomenon than the skin effects of Takaoka and they are dealt with in different ways. Eddy currents are produced within the conductive strands and result in heating losses in the conductor. The insulated strands in the invention prevent currents from migrating to adjacent strands. In Takaoka, the various insulation patterns are designed to minimize the skin effect. It can be seen that in Takaoka insulates only some of the strands from each other. In the present invention, the conductors are insulated from each other in the conductive core of the cable winding. At the same time, a very few of the outermost conductors in the conductive core are uninsulated so that they can make electrical contact with the inner semiconducting layer in order to establish an equipotential surface around the core to thereby suppress and confine the electric field to within the cable.

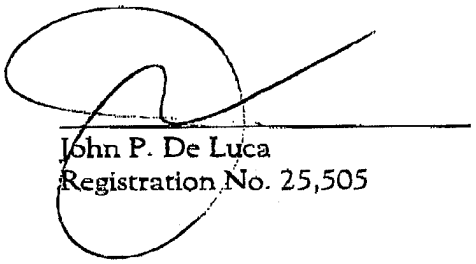
As can be readily seen, Figs. 7-11 of Takaoka and the accompanying description belie any suggestion that the arrangements therein would be useful in the present invention. For example, in Fig. 7, the two outer layers of the conductive strands are uninsulated. Accordingly, eddy currents produced in any individual conductor would find a current path to any other adjacent uninsulated conductor. This would be disadvantageous to the operation of the machine of the invention. In Fig. 8, the outer layers are insulated and the inner layers are uninsulated. In Fig. 8, the outer layers would not contact the inner semiconducting layer and hence would not establish an equipotential surface. Thus, the arrangement of Fig. 8 would not be useful for the purpose of establishing an equipotential surface and would not suppress eddy currents. The arrangements of Figs. 9-11 have similar disadvantages. In the present invention, the conductors in the conductive core are insulated from each other. This is not the case in Takaoka, where some of the conductors are not insulated from each other. In the present invention, although some of the conductors in the conductive core are uninsulated strands, they are still insulated from adjacent strands and they are arranged such that they contact the inner layer of the inner

semiconducting layer to establish the equipotential field. Takaoka does not perform these same functions. It is believed that the invention is patentably distinct from the claimed references or any combination thereof and such a determination is earnestly solicited.

In view of the foregoing, it is therefore respectfully requested that the Examiner reconsider the rejection of the claims, the allowance of which is earnestly solicited.

If filing this paper or any accompanying papers necessitates additional fees not otherwise provided for, the undersigned authorizes the Commissioner to deduct such additional fees from Deposit Account No. 04-2223.

Respectfully submitted,



John P. De Luca
Registration No. 25,505

DYKEMA GOSSETT PLLC
1300 I Street N.W.
Suite 300 W
Washington, D.C. 20005
(202) 906-8600